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Shrubs and Trees of the Southern States.—IV.

BY JOHN K. SMALL

1. THE EBENACEAE IN THE SOUTH

Two types with as divergent characters as those possessed by *Diospyros Virginiana* and the so-called *D. Texana*, cannot with the least degree of systematic order, be referred to the same genus. The two plants are of wholly different habit, and the flower-structure of the two is so distinct that I cannot understand on what grounds they have been associated with each other in the same genus. The distinguishing characters of the two trees, which I shall treat as two distinct genera, may be compared by means of the following synopsis :

EBENACEAE

A family of about 6 genera and 275 species, most abundant in tropical regions. Only the following representatives are now known to occur in the United States.

Key to the Genera

Styles distinct : anther-sacs opening by longitudinal slits : filaments pubescent : pistillate flowers without staminodia. 1. DIOSPYROS.

Styles united : anther-sacs opening by subapical pores ; filaments glabrous : pistillate flowers with 8 staminodia. 2. BRAYODENDRON.

1. DIOSPYROS L.

1. *D. VIRGINIANA* L. Sp. Pl. 1057. 1753

In woods and fields, Rhode Island to Kansas, Florida and Texas. As now limited this species may be an aggregate. One or two additional species may be separable in the south Atlantic and Gulf States.

2. *Brayodendron* *

1. *B. Texanum* (Scheele)

Diospyros Texana Scheele, Linnaea, 22 : 145. 1849.

Along or near streams in river valleys, southern Texas and adjacent Mexico.

* Named for Prof. W. L. Bray, head of the School of Botany, University of Texas.

2. HITHERTO UNDESCRIBED SPECIES

Quercus microcarya

A shrub, or a small tree sometimes 5 m. tall, with very smooth branches and glabrous foliage. Leaves deciduous; blades thin, spatulate in outline, 5–10 cm. long, undulate or shallowly lobed, gray-green above, yellowish green beneath, short-petioled, the small bristles terminating the lobes early deciduous: acorns sessile, less than 10 mm. long; cup deep saucer-shaped, 6–7 mm. broad; nut globose-ovoid, often nearly one-half included in the cup.

On granite outcrops, Little Stone Mountain, Georgia.

Related to *Q. nigra*, but more delicate in all its parts. The leaf-blades are relatively thin and more irregularly lobed, while the very small acorns, always, as far as I have observed, less than 10 mm. in length, with their relatively deep saucer-shaped cups, are very distinct from the larger fruit of *Q. nigra* with its very shallow cup. The fruit is much smaller than that of any of the species of the group to which this plant belongs.

The original specimens were collected by the writer on Little Stone Mountain, Georgia, September 11, 1894. Type in the herbarium of the New York Botanical Garden.

Quercus fusiformis

A shrub 1.5–3 m. tall, with slender or switch-like stems or branches. Leaves persistent; blades leathery, oblong or ovate-oblong, 3–5 cm. long, entire or sparingly spiny-toothed on the twigs, gray-green and lustrous above, paler and scurfy-tomentose beneath, slightly revolute, rounded or truncate at the oblique base, short-petioled: acorns numerous, solitary or several on slender peduncles; cup turbinate, 10–12 mm. high, gray; nut fusiform, 2–2.5 cm. long, acute, conspicuously striate, thrice surpassing the cup.

On arid limestone and granite hills, central Texas.

Quercus fusiformis belongs to the group formed by *Q. minima*, *Q. geminata* and *Q. Virginiana*. It is most closely related to *Q. Virginiana*, but differs in the much elongated acorn with its turbinate cup and fusiform nut.

The original specimens were collected on Lacey's Ranch near Kerrville, Texas, by Mr. Howard Lacey during the years 1899–1900, and given to me by Professor W. L. Bray, of the University of Texas. Locally known as LIVE OAK. Type in the herbarium of the New York Botanical Garden.

Quercus Laceyi

A shrub or small tree, becoming 6 m. tall, with a rough deeply and irregularly grooved bark. Leaves deciduous but rather tardily so, numerous; blades oblong and with 3–5 shallow lobes, or oblong-obovate and more prominently 3-lobed below the apex, 4–8 cm. long, olive-green and with a waxy lustre above, grayish and slightly and minutely scurfy beneath, sometimes truncate or subcordate at the base, short-petioled: acorns sessile or nearly so; cup shallowly saucer-shaped, very thick and corky; nuts oblong to oblong-ovoid, 15–19 mm. long, often depressed at the apex: seed very bitter.

On the summits of Caprina limestone hills, north-central Texas.

Related to *Q. breviloba* but differing markedly in the glabrous leaves, the thick corky coarsely warty cup of the acorn and the oblong or ovoid-oblong nut.

The original specimens were collected on Lacey's Ranch near Kerrville, Texas, by Mr. Howard Lacey during the years 1899–1900, and given to me by Professor W. L. Bray, of the University of Texas. Locally known as BASTARD OAK. Type in the herbarium of the New York Botanical Garden.

Quercus Brayii

A large tree sometimes 18 m. tall, or more, with a pale flaky bark. Leaves very numerous, deciduous; blades thin, cuneate, 10–20 cm. long, abruptly acuminate at the apex, regularly and coarsely sinuate-toothed nearly to the base, glabrous, with relatively few, prominent and regularly placed lateral ribs, deep green above, slightly paler and rather olive-green beneath; petioles 1.5–2.5 cm. long; acorns sessile or nearly so; cup hemispheric, 2–2.5 cm. broad, the lower scales somewhat warty on the back; nut oblong or ovoid, 2.5–3 cm. long, about 1.5 cm. thick: seed rather sweet.

In cañons, central Texas.

Quercus Brayii is most closely related to *Q. Michauxii*, but differs conspicuously in the membranous and glabrous leaf-blades with their few coarse teeth and lateral ribs, and the shorter and warty-thickened scales of the cup of the acorn. The original specimens were collected on Lacey's Ranch near Kerrville, Texas, by Mr. Howard Lacey in the years 1899–1900, and sent to me by Professor W. L. Bray. It is locally known as WHITE OAK. Type in the herbarium of the New York Botanical Garden.

AEsculus austrina

A shrub several meters tall, with pubescent foliage and inflorescence. Leaf-blades 1–3 dm. broad, long-petioled; leaflets 3–5, firm or leathery, oval or oval-ovate, short-acuminate at both ends or acute at the oblique base (except in the case of the terminal one), lustrous and glabrate above, except on the tomentose nerves, densely tomentose beneath, sharply serrate, commonly quite long-petioluled: panicles 1–1.5 dm. long, tomentose: flowers deep red, about 3 cm. long: calyx tubular, red, 10–14 mm. long, glabrous; lobes ovate, rounded: petals minutely glandular, those of the upper pair with oval blades about as long as the slightly villous claws, those of the lateral pair with obovate blades which are exceeded several times in length by their claws: stamens exerted; filaments sparingly villous.

In low grounds, Louisiana.

Most closely related to *AEsculus Pavia*, from which it differs in the foliage and flowers. It is *AEsculus Pavia* β *discolor* of Torrey and Gray,* in part, but not the *AEsculus discolor* of Pursh.† Torrey and Gray's disposition of this plant is the most nearly correct interpretation we have yet had. Dr. Gray later referred it to his *AEsculus flava* var. *purpurascens*, a species with which it has but distant relationship.

The specimen on which the species is founded was collected in Louisiana by Dr. Hale and is preserved in the herbarium of Columbia University.

Hypericum interior

A much branched shrub, several dm. tall, with sharply angled branches and glabrous foliage. Leaves rather numerous; blades narrowly oblanceolate to narrowly linear-oblanceolate, 1–3 cm. long, acute, slightly revolute, pale beneath, narrowed into slender petioles: panicles many-flowered: sepals linear or narrowly oblong, 3–4 mm. long, acute, rather rigid, more or less spreading at maturity: corollas yellow, about 1 cm. broad: petals obovate or cuneate-obovate: capsules conic-ovoid, 5 mm. long.

Along streams, Tennessee and Texas. Summer.

A shrubby species related to *Hypericum galioides*, but more corymbosely branched, and with broader leaf-blades. The sepals

* Fl. N. A. 1: 252.

† Fl. Am. Sept. 254.

are characteristic, being linear or nearly so, instead of manifestly narrowed to the base. The following specimens belong here :

TEXAS : [no locality], *Veatch*.

TENNESSEE : near Dandridge, July, 1842, *Rugel* :—type, in the herbarium of Columbia University.

Azalea candida

A rigid shrub 1–2 m. tall, with wide-branching stems and white-tomentose young foliage, or the twigs sometimes brownish. Leaves numerous ; blades leathery, obovate, oblanceolate or oblong, 1–5 cm. long, acute or apiculate, ciliate, somewhat revolute, thinly tomentose above, densely white-tomentose and somewhat reticulated beneath, short-petioled : corymbs several-flowered : pedicels canescent and copiously glandular-pubescent : calyx-lobes pectinate-ciliate : corolla rose-colored or pinkish, 3–3.5 cm. long : capsules 1.5–2 cm. long, canescent, curved, longer than their pedicels, often twice as long.

In hammocks and river swamps, southern Georgia. Spring.

Related to *Azalea nudiflora*, but easily distinguished by the copious soft pubescence of the twigs, the white-tomentose leaf-blades, the smaller flowers and the smaller softly and closely pubescent capsules. Collected by the writer along the Withlocooche River about Valdosta, Georgia, June 6–12, 1895. Type in the herbarium of Columbia University.

Dendrium Hugerii

An evergreen shrub 2–4 dm. tall, with erect much branched stems. Leaves mainly alternate ; blades leathery, oblong, 1–1.5 cm. long, lustrous and dark green above, paler beneath, obtuse, revolute, somewhat obliquely narrowed into petioles 1–2 mm. long : flower-clusters dense : bracts oblong-ovate, 3 mm. long, obtuse : pedicels 5–10 mm. long, minutely glandular : calyx nearly glabrous ; lobes lanceolate, about 1 mm. long, acute : corolla white ; lobes ovate, 4 mm. long, obtuse : filaments club-shaped, as long as the corolla-lobes : capsules ovoid, 4–4.5 mm. long, glabrous or nearly so, obtusely lobed, twice as long as the calyx-lobes, abruptly contracted into the stoutish style which is about as long as the capsule-body.

On cliffs and rocky mountain summits, North and South Carolina. Spring and early summer.

This overlooked species is most closely related to *Dendrium*

buxifolium of the Atlantic pine lands ; it is, however, larger throughout and more erect. It may readily be separated by the large leaves, the filaments, which are about as long as the corolla-lobes, and the large capsule, which is about twice as long as the calyx-lobes.

NORTH CAROLINA : Top of Hibriten Mountain, Lenoir, Sept., 1896, *A. M. Huger*. Table Rock, *S. B. Buckley*; *Small & Heller*, 1891.

SOUTH CAROLINA : Top of Table Mountain, August, 1896, *J. K. Small*:—type, specimen in the herbarium of Columbia University.